F·A·A·M facility for airborne atmospheric measurements

FLIGHT FOLDER

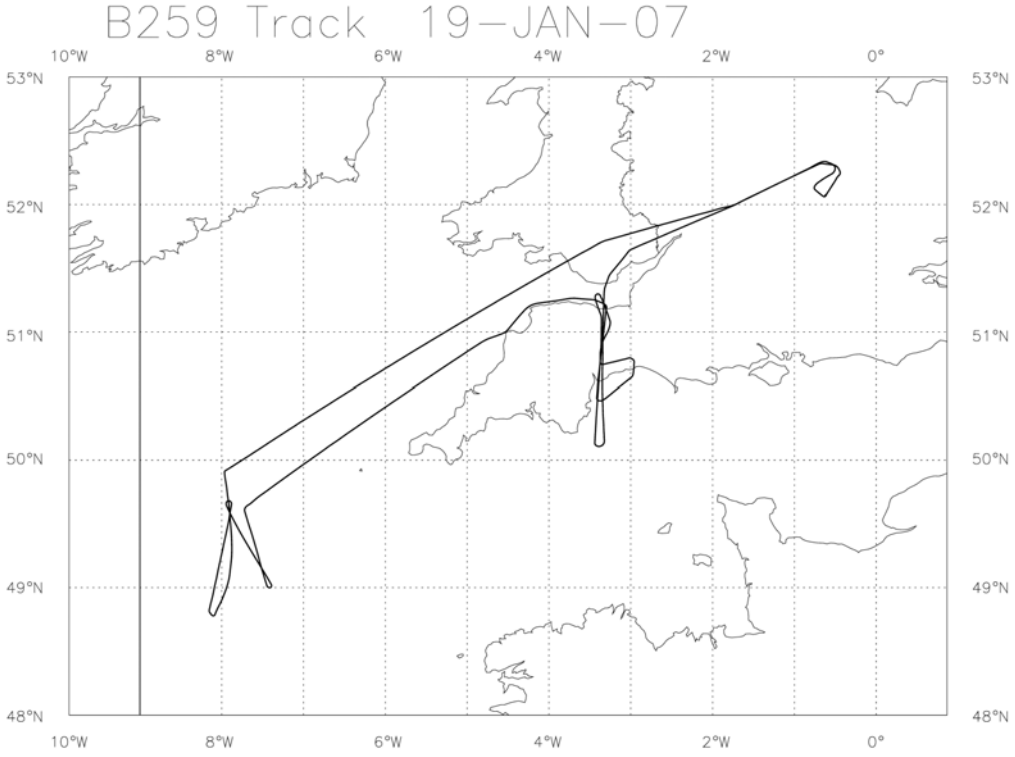
Flight No.:	B259
Date:	19 January 2007
Take Off	11:57:45
Landing:	17:09:42
Flight Time	5h11m57

Campaign: WINTEX – CAESAR

Operating Area: SW Approaches

POB	Position	Name	Institute
1	Captain	Alan Roberts	Directflight
2	Co-pilot	Ian Ramsay-Rae	Directflight
3	CCM	Dawn Quinn	Directflight
4	Mission Scientist	Ben Johnson	Met Office
5	Flight Manager	Alan Wooolley	FAAM
6	AVAPS / CCM2 / Chem training	Stuart Heath	FAAM
7	Cloud Physics	Jamie Trembath	FAAM
8	Observer	Adrian Lock	Met Office
9	Mission Scientist 2	Stuart Newman	Met Office
10	Core Chemistry	Kate Turnbull	FAAM
11	TAFTS	Neil Humpage	Imperial College
12			
13			
14			
15			
16			
17			
18			
19			
20			

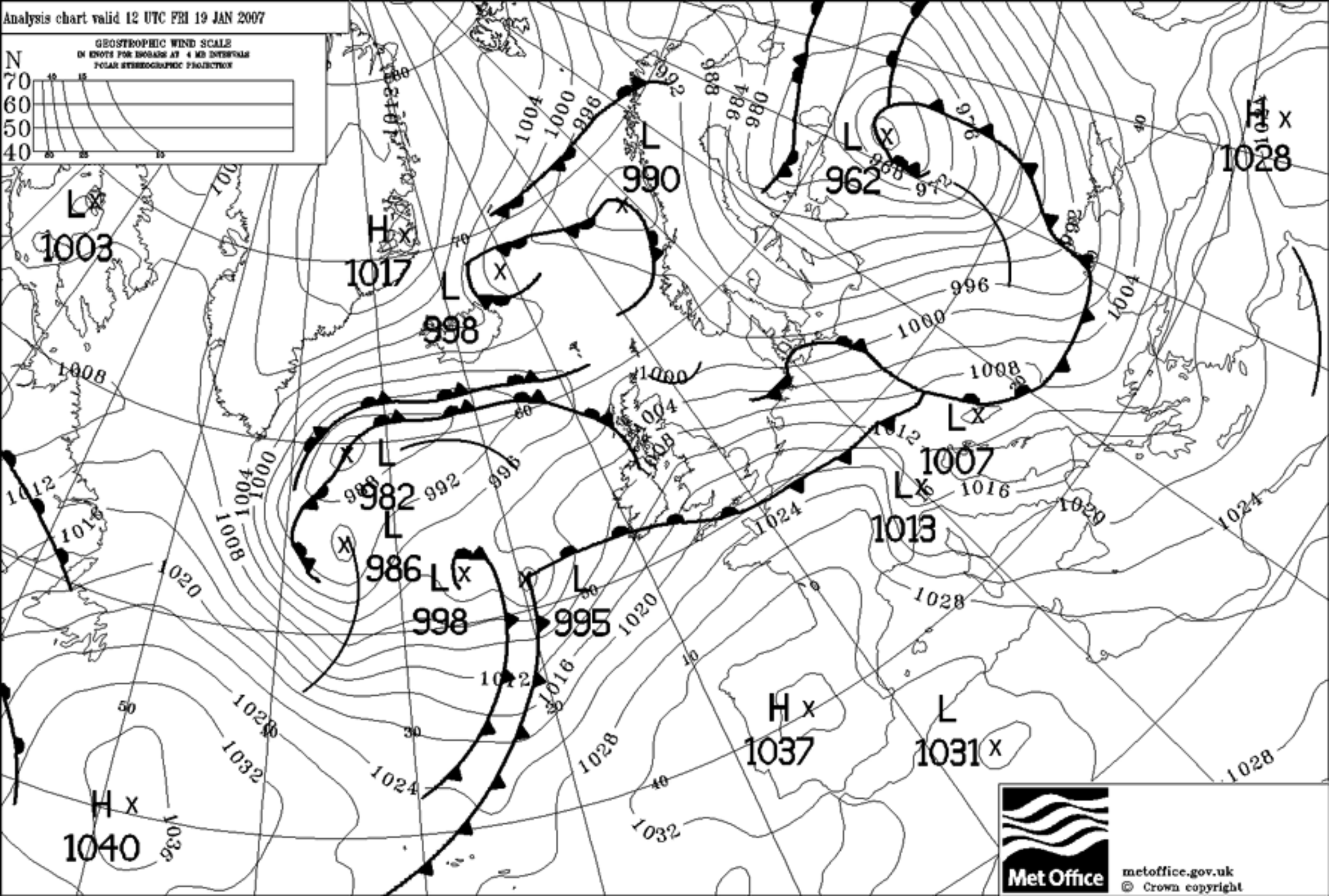
Flight Track:



FLIGHT SUMMARY

Flight No b259
Date: 19/01/07
Project: WINTEX
Location: SW Approaches

Start Time	End Time	Event	Height (s)	Hdg	Comments
114355		engine start	0.29 kft	127	
114448		inu to nav	0.29 kft	127	
114814		taxy	0.30 kft	127	
115336	115543	GIN test	0.31 kft	033	
115745		T/O	0.27 kft	213	from Cranfield
120219		jw/nevz	7.2 kft	050	zero
121325		bbr	10.0 kft	249	retract
124307	125958	Profile 1	18.0 - 0.87 kft	248	
124530		bbr	15.5 kft	245	extend
130231	133524	sawtooth 1	0.88 - 0.83 kft	237	
130801		sawtooth 1	5.8 kft	241	peak
131316		Sawtooth 1	0.86 kft	237	trough
131935		sawtooth 1	5.9 kft	240	peak 2
132531		sawtooth 1	0.88 kft	236	trough 2
133004		sawtooth 1	4.9 kft	239	peak 3
133622	134024	Profile 2	0.88 - 4.4 kft	184	
134025	134619	Profile 3	4.4 - -.06 kft	184	
134431		Video	0.66 kft	185	dfc to ufc
134628	135659	Run 1	-.06 - -.08 kft	182	
135705	135812	Profile 4	-.06 - 0.87 kft	208	
135956	141010	Run 2	0.88 - 0.86 kft	005	
140929		Video	0.85 kft	005	change tapes
141010	141230	Profile 5	0.86 - 3.3 kft	003	
141420	142436	Run 3	3.4 kft	167	
142214		Video	3.3 kft	161	changed to dfc, rfc
142442	142537	Profile 6	3.3 - 2.8 kft	161	
142711	143714	Run 4	2.8 kft	333	
142837		bbr retract	2.8 kft	331	
143819	144818	Run 5	3.0 kft	054	
144827	145637	Profile 7	3.0 - 18.0 kft	054	
144939		rate of climb	4.1 kft	053	increased
145450		bbr extend	15.6 kft	050	
145647		Sonde 1	18.0 kft	052	
150526	151148	Profile 8	5.7 - 3.5 kft	053	
150819		Profile 8			interrupt
151020		Profile 8	3.5 - 2.1 kft	035	resume
151224	151528	Profile 9	2.1 - 5.5 kft	039	
151545	152154	Profile 10	5.5 - 2.6 kft	083	
151857		Profile 10	3.0 kft	099	interrupt
152122		Profile 10	3.1 kft	120	resume
152237	153256	Run 6	2.6 - 2.7 kft	197	
153308	153419	Profile 11	2.7 - 1.6 kft	191	
155002	155708	Run 7	0.93 - 0.99 kft	354	
155715	155925	Profile 12	1.1 - 3.7 kft	333	
155937	161854	Run 8	3.7 kft	180	
160017		bbr	3.7 kft	172	retract
161912	161952	Profile 13	3.8 - 4.5 kft	192	
162152	163813	Run 9	4.2 kft	344	
163825	164415	Profile 14	4.3 - 10.0 kft	351	
163907		bbr	5.0 kft	351	extend
170942		Land	0.32 kft	213	cranfield
170958		gin test	0.32 kft	211	
171235		gin test stop	0.33 kft	212	
171635		standstill	0.31 kft	309	52'04.36N, 0'37.50W


Analysis chart valid 12 UTC FRI 19 JAN 2007
GEOSTROPHIC WIND SCALE
IN KNOTS FOR ISOBARS AT 4 MB INTERVALS
POLAR STEREOGRAPHIC PROJECTION
N
70
60
50
40
L 1003
H 1017
L 998
L 990
L 962
H 1028
L 1007
L 1013
H 1037
L 1031
L 982
L 986
L 998
L 995
H 1040
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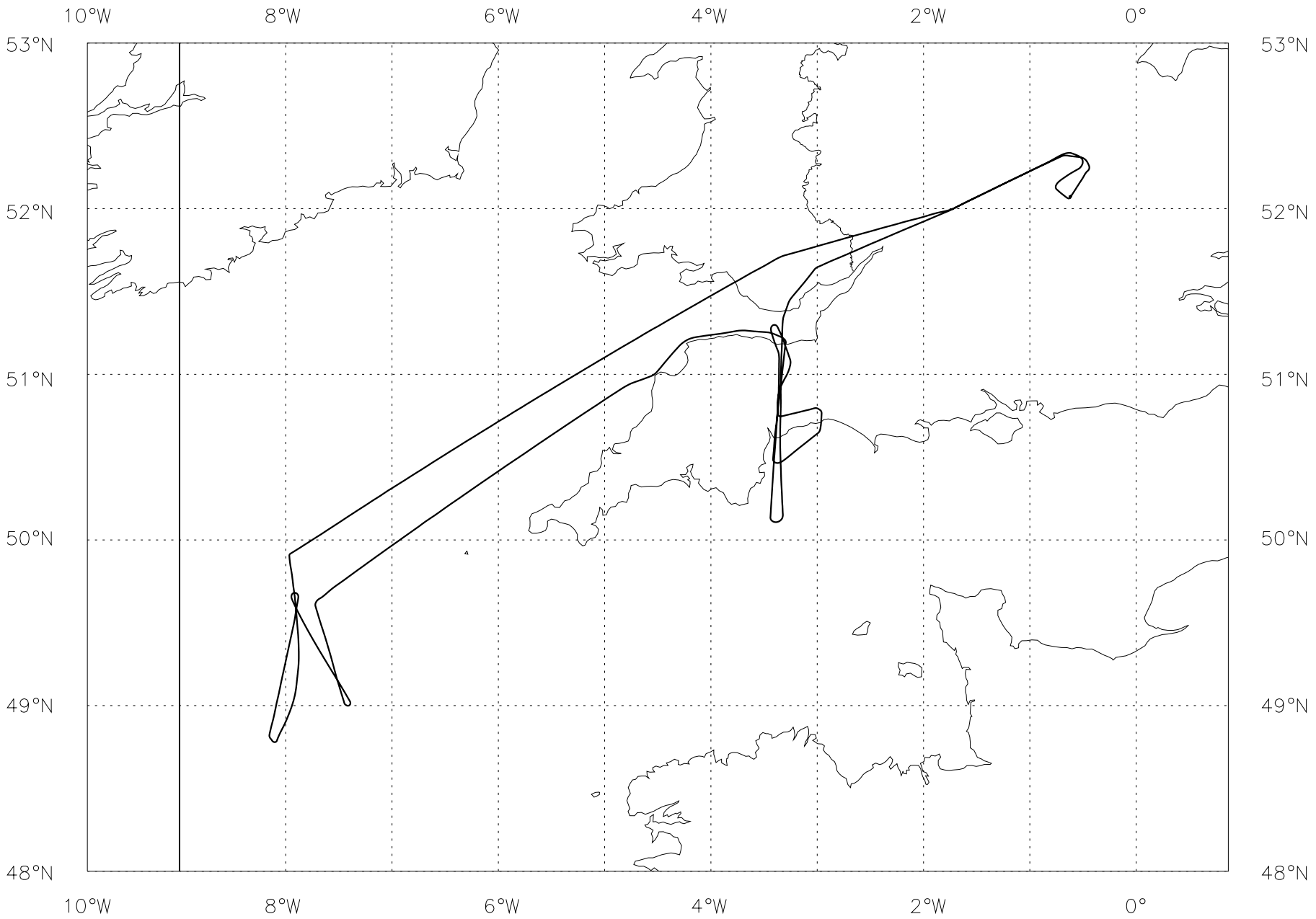
B259 Track 19-JAN-07



WINTEX Sortie Brief: Stratocumulus measurements 2

Date : 19 Jan 2007 **Flight Number : B259**
Mission Scientist : B.Johnson/S.Newman

Sortie Aims: The principal aim of this sortie is to obtain measurements of the microphysical, dynamical and radiative characteristics of stratocumulus cloud over sea areas around the UK. These will be combined with surface-based measurements at Cardington, Weybourne (N.Norfolk coast), RAF Marham and Chilbolton to provide a comprehensive observational study of the evolution of a Sc layer over land. The combined dataset will be used to study the performance of the Unified Model.

Stacks of straight /level runs are flown to determine vertical profiles of turbulent fluxes and to document cloud microphysical structure. Sawtooth profile alongwind is used to study variations in cloud top and base heights, inversion properties and LWC profiles.

Sortie Location: Bristol Channel / SW Approaches

Weather conditions: A layer of stratocumulus forming over the sea and extending over the land. An absence of medium / upper cloud is preferred but not essential. No precipitation falling into the Sc layer.

Instrument requirements:
- JW / Nevzorov to be zeroed when in clear air at any altitude when straight / level.
- Cloud physics console. Normal operation of all probes
- CDP - operating
- Turbulence probe – monitor performance when in icing conditions.

Sortie detail:
1. Take-off Cranfield 1200z.
2. Transit to SW approaches at FL160 [40 min, T=40mins]
3. Drop sonde #1
4. Profile descent to 50ft, 1000ft/min [15mins, T=55mins]
5. Commence stack of SLRs of 10 min duration, Orientation either along- or acrosswind, as convenient. Minimum number of altitudes to be flown: 500ft asl, Cloudbase – 500ft, Cloudbase +500ft, mid-cloud-level, Cloudtop – 500ft, Cloudtop + 1000ft. [70mins, T=125 mins]
6. Commence sawtooth profile heading downwind. Max.altitude Cloudtop + 500ft, min altitude Cloudbase – 1000ft. Ascent / descent rate 1000ft/min. Terminate the run in a location where it is possible to commence 10 min straight / level legs over land. [20min, T=145 mins])
7. Repeat item (5) over land [70min,T=215 mins]
8. Repeat item (6) in the reverse direction (heading back to sea). [20min,T=235 mins]
9. Repeat as much of item (5) as is possible within remaining time leaving time for final ascent and sonde in items 10/11. [35 min, T=270 mins]
10. Profile ascent to FL160 at 1000ft/min [15mins, T=285mins]
11. Drop sonde #2 [5mins, T=290mins]
12. Return transit to Cranfield [40mins, T= 330mins]
13. Land at Cranfield 17:30Z

Mission scientist Debrief Flight No. B259

Ben Johnson 19 Jan 2007

Stratocumulus over the ocean

Weather:
A warm front, orientated at 130 degree, was approaching front the southwest. Cold front was just west of Ireland and orientated 200 degrees. During the flight we went through this front into the bulk of the warm sector. High level cirrus was observed as the warm front approached. Slightly broken and non-precipitating mid level cloud was observed in the warm sector whenever the aircraft came above the BL cloud top.

Operating region:
SW approaches out as far as 49N, 8W, and over East Devon.

Mission objectives:
In-situ measurement of the microphysical and dynamical properties of stratocumulus over the ocean and advecting on to the land.

Flight patterns:
Take off at 1200Z from Cranfield. Transit to SW approaches at FL180 via Bristol channel. Profile descent to 1000ft just off Cornwall. A series of sawtooth profiles were flown from minimum permitted altitude (we were often still in cloud at 1000ft and could go no lower) to 5000 or 6000ft. These were continued out further to the south-west (deep into the warm sector). Boundary layer height was around 5500ft but this varied through the flight and was generally lower (between 4500 and 5000ft). There was no consistent pattern in terms of cloud tops and bases. Often there were two or three separate layers of cloud within the BL. The lowest layer was around 100ft asl and seemed to correspond to a surface mixed layer. Above that was a slight inversion of 1K or so, with a very slight drop in humidity mixing ratio. Cloud layers were then observed mid way in the BL and just below the BL top. These cloud layers were broken in places, and quite variable. The top of the highest cloud layer (BL top) also varied by 200-500 ft over the course of 10 min runs. Each layer was usually quite thin (1000ft or less). These cloud conditions were not a classic or easily workable case. A series of SLRs were flown at 100, 1000, 3500, 2900, and 3100ft. A profile ascent was made up to FL180 where a sonde was dropped. Maximum ascent and descent rate was used once above the BL to minimise time spent in this exercise. Descent was made to 2,200ft in the Bristol channel. Then a series of 4 runs were made over East Devon at altitudes of 2700, 1000, 3700 and 4200ft. Before the 1000ft run an approach was made to Exeter airport to enable a safe descent to that altitude given that visual contact with the ground was not possible at 2,700ft (the minimum permitted altitude in-cloud over that track). The runs at 2,700 and 3700ft were in cloud most of the time. The run at 4200ft was sometimes above the cloud top and sometimes just below it. The later run was extended further out over the English channel, whereas the first run did not go much beyond Exmouth. A profile ascent to 8000ft was made on-transit back to Cranfield.

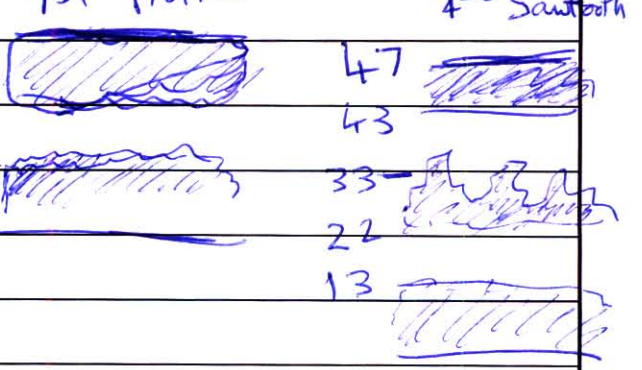
Summary:

A complex situation with a slightly stratified BL with variable amounts of cloud observed at almost every height from 800ft up to the BL top. This may prove useful as a land/sea contrast or evolution case study or for studying warm sector BL processes.

Mission Scientist's Log

Flight No **B**259 Date 19/1/07 Name Ben Johnson Page 1 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
115745	T/O				2/8 cirrus No low-level cloud
121000					Approaching warm front with cirrus and ~~alto~~ stratus / altocumulus
122000					Low cloud ahead
122000		FL180	260	51.9 2.1W	Entered mid-level cloud
					but patchy & intermittent
					and at various altitudes
122500					BL at Cranfield was 3000ft
123500		FL180	250		Cloud thickening above and
					below
124307	P1	FL180	230		Entered cloud at FL170
					but only a thin altostratus layer
					Stratus / stratocumulus below
125500	[redacted]	FL55	230		Cloud top FL55
					very uniform cloud top
					not very turbulent
125958	Grd P1	FL10	230		
	[redacted]	FL10			
130231	Saw tooth 1	FL10	230		1st profile
		FL60		FL55	
		FL10		FL30	
				FL15	
131935	"	FL60			1st Sawtooth
	"	FL10			47
					43
					33
					22
					13



Aircraft Scientist's Log

Flight No B259 Date 19/1/07 Page 2 of 5

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GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
132535	saw tooth	FL10	235		2nd Sawtooth Nothing above
3004	↓	FL50	230	38 30	40 30
		~~FL10~~			
133524	GAD	FL10	230		17
					Turn further south
133628	saw tooth 2	FL10	185	49.9N 7.9W	37 32
134024		FL45	185		18
					38 30
					10
					0
134619	End sawtooth	100ft	185		
13[4546]	R1	~~100~~ ft	185		
	"	"	"		Run at 100ft, Sea quite choppy. Sea salt aerosol observed on SID and Nephelometer
135[9]05	End R1				Some drizzle/rain on 2D-P
					~~At~~ Mid and upper level cloud.
135956	R2				600ft cloud base
					Reciporacal Run at 100ft in the lowest cloud layer
					In and out of cloud all very fine particles r < 25mm
					NO 2D-C counts just SID

Aircraft Scientist's Log

Flight No B.259 Date 19/1/07 Page 3 of 5

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GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
141010	End P2	1600ft	0		
141010	P5	1600ft	0		
141230	P5	FL35	0		Cloud top was at 3,300ft
					mid level cloud above
141420	R3	FL35	165		Run just above cloud top
		"	"		Getting moister to the south
142020					Skimmed cloud top
142436	End P3	"	"		
142442	P6	FL33	"		
142537	End P6	FL29	"		
142711	R4	FL29	330		Through the middle of cloud
					Sometime going underneath
					cloud
143819	R5	FL31	45		Nice higher LWC here
144200					Just skimming out of cloud
					top occasionally
144818	End	FL31			Cloud dissapeared at this level
144827	P7	FL31	50		Ascending at max rate
[illegible]	[illegible]	[illegible]	[illegible]		from 3[illegible] to FL180
[illegible]	155647				Drope Sonde #1 at FL180
155026	P8				dropping down at max rate
[illegible]					going through mid-level
					ice clouds at FL150
151224	P9				5/8 stratus/stratocumulus
					below cloud top 4,500ft

Aircraft Scientist's Log

Flight No B259 Date 19/1/07 Page 4 of 5

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GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
150819	Interupt	FL35	70		
151020	Resume	FL35	35		small amount of rain
151528	(P9) End	FL22			cloud base just below
151	P10	FL22			3,500ft
					High or mid level cloud above
		FL55			
151827	Interupt	FL37			
152122	Resume	FL37			
		FL27			
152237	R6	FL27			Run over
153256	End	FL27			East Devon
					in cloud
					mostly
153308	P11	FL27			
153419	END	FL17			~~Run over East Devon at minimum permitted altitude~~
					Problems with FFSP during the flight, keeps going down.
154910		FL10			Doing missed approach at Exeter to get below cloud.
					Run over East Devon at 1000ft
					cloud base at 1,500ft
155002	R7	FL10			Little drizzle at times
					showers observed to the west

S1 45 35

S2 37

unknown

Aircraft Scientist's Log

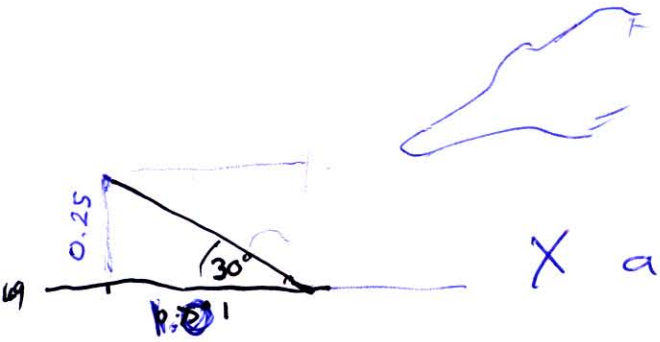
Flight No B.259 Date 19/1/07 Page 5 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
155925	END				
155937	R8	FL37			Over E. Devon towards Exeter
					~~Ex~~ as Mainly out of cloud
					on this one though
					still in BL. Extended run out.
162152	R9	FL42			cloud ~~base~~ top ~4500
163813	End				but variable
					~~Still~~ Returning north over
					E. Devon
163825	P14	FL42-FL180			Returning to Cranfield.

FFSSP Intermittent problems recording data

CIP duff

SID 2 off little bit



Time for each degree west
= ~~[illegible]~~ 10 mins

X aim for 49° 30' = 49.5

8W

75km x $\frac{1}{\sqrt{2}}$ = 0.5

CLOUD PHYSICS LOG Flight B 259

Date: 19/01/07	Operator: JT	DRS Time: +0	AU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 1 of 3

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
12:02:00																	CIP recording
12:03:00																	FFSSP started recording
12:13																	SID 1 recording
12:43:07	35	0.08	15	10	1	0	0	noise		0	0	0				0	Start P1 FL180
12:44:12	24	0.09	17	1000	800	2	800	841	3000	0	0	0				9	170
																	160
12:45:58	20	0.1	24	0	0	0	0	41	1000	0	0	0				4	150
12:47:10	13	0.08	24	0	0	0	0	0	0	0	0	0				0	140-
12:48:08	19.26	0.11	24	0	0	0	0	0	0	0	0	0				0	130
12:49:04	25	0.09	24	0	0	0	0	0	0	0	0	0				0	120
12:50:02	9	0.08	24	0	0	0	0	0	0	0	0	0				0	110
12:50:58	14	0.08	24	0	0	0	0	0	0	0	0	0				0	100
12:51:58	23	0.08	24	0	0	0	0	0	0	0	0	0				0	90
12:52:48	30	0.09	24	0	0	0	0	0	0	0	0	0				0	80
12:53:48	17	0.08	24	0	0	0	0	0	0	0	0	0				0	70
12:54:53	6	0.09	24	0	0	0	0	0	0	0	0	0				0	60
12:55:40	21	0.44	29	1000	300	21	150	0	0	0	0	0				1	50
12:56:46	44	0.43	42	5000	1000	567	100	0	0	0	0	0				1	40
12:57:43	14	0.02	66	10	1	81	150	0	0	0	0	0				1	30 gap
12:58:43	10	0.11	66	10	0	0	0	0	0	0	0	0				0	20
12:59:43	144	0.26	93	1000	1000	159	100	0	0	0	0	0				1	P1 end 1000ft
13:02:33	17	0.26	304	1000	1000	6	300									1	Start P2 800ft
13:03:53	20	0.1	317	80	0	0.5	400									1	FL20
13:05:05	19	0.12	321	2000	1000	42	150									1	FL30
13:06:10	20	0.1	330	10	10	0	0									0	FL40
13:07:10	11	0.08	331	0	0	0	0									0	FL50
13:08:02	15	0.09	331	0	0	0	0									0	End P2 Start P3 FL60
13:08:51	15	0.1	331	0	0	0	0									0	FL50
13:09:56	17	0.11	348	10	0	0	0									0	FL40
13:10:57	159	0.32	356	1000	1000	500	150-									1	FL30
13:11:57	29	0.1	356	10	0	0	0									0	FL20
13:13:05	188	0.26	392	100	100	33	150									1	FL10
13:14:05	13	0.1	404	10	0	0	0									0	FL20
13:16:10	14	0.1	404	10	0	0	0									0	FL30
13:17:23	7	0.07	404	1	0	0	0									0	FL40
13:18:26	17	0.08	404	0	0	0	0									0	FL50
13:19:26	20	0.09	404	0	0	0	0									0	FL60
13:20:41	22	0.09	404	0	0	0	0									0	FL50
13:21:44	26	0.11	404	0	0	0	0									0	FL40 cloud at 35
13:22:56	30	0.15	487	1000	800	15	150	0	0							1	FL30
13:24:05	65	0.1	491	10	0	0	0	0	0							0	FL20
13:25:30	150	0.24	652	3000	3000	188	225	33	Streaks							1	FL10 cloud 15
13:26:30	24	0.09	732	10	0	0	0	0	0							0	FL20
				1000	1000	1	No size									0	FL30
13:29:09	21	0.1	743	17	0.09	0	0	0	0							0	FL40
13:32:36	81	0.09	760	100	1	0	0	0	0							0	FL30 v small particles 35

CLOUD PHYSICS LOG Flight B 259

Date: 19/01/07	Operator: JT	DRS Time: +0	AU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 2 of 3

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
13:33:47	227	0.29	764	8000	3000	95	175	0	0							1	FL20 cloud start 18
13:35:06	194	0.23	943	8000	3000	156	200	33	Streaks							1	End saw tooth 1FL10
13:36:21	121	0.16	1049	8000	1000	81	150	8	Streaks							1	Start P2 FL10
13:37:41	69	0.1	1116	100	0	0	0	0	0							0	FL20
13:38:57	63	0.08	1127	0	0	0	0	0	0							0	FL30
13:40:24	20	0.09	1127	0	0	0	0	0	0							0	End P2 Start P3 FL40
13:41:56	52	0.17	1127	3000	1000	19	50	0	0							1	Fl30 Strategy change record cloud layers
13:43:00	69	0.1	1127	10	0	0	0	0	0							0	FL20
13:44:00	62	0.1	1127	30	0	0	0	0	0							0	FL10
13:44:36	155	0.11	1127	100	1	0	0	0	0							0	500ft
13:45:10	158	0.1	1127	100	1	0	0	0	0							0	100ft
	230																50ft end P3
13:46:28	137	0.13	1127	100	8	0	0	0	0							0	Start run 1 100ft
13:48:00	106	0.12	1127	100	3	0	0	0	0							0	
13:50:00	145	0.12	1127	100	3	0	0	0	0							0	
13:52:00	105	0.12	1127	100	1	0	0	0	0							0	
13:54:00	112	0.11	1127	100	3	0	0	0	0							0	
13:56:00	126	0.11	1127	100	3	25	225	100	225							1	End of run 1 Start P4
13:58:00	41	0.18	1127	1000	1000	12	150	0	0								600ft
																	Ffssp noticed not to be working Poss since 13:39
																	FFSSP restarted, recording as B999
																	Run 2
14:05:00	88	0.1	33	300	0	0	0	0	0							0	
14:07:00	83	0.11	39	100	1	0	0	0	0							0	
14:09:00	81	0.1	61	1000	100	0	0	0	0							0	
14:10:05	101	0.11	68	100	1	0	0	0	0							0	End run 2 start P 5
14:11:05	92	0.1	68	10	0	0	0	0	0								FL20
14:12:31	36	0.1	83	0	0	0	0	0	0							0	End P5 FL30
14:14:20	45	0.08	84	0	0	0	0	0	0							0	Start run 3
14:16:00	29	0.09	84	0	0	0	0	0	0							0	
14:18:00	23	0.08	84	0	0	0	0	0	0							0	
14:20:00	20	0.9	84	0	0	0	0	0	0							0	
14:22:00	9	0.09	86	0	0	0	0	0	0	0						0	
14:24:40	15	0.09	86	0	00	0	0	0	0	0						0	END RUN p6
14:25:09	211	0.21	95	8000	1000	97	125	0	0							0	END OF p
14:27:12	194	0.36	165	3000	1000	1018	200	16	Streaks							1	Start run 4 2900ft
14:29:00	17	0.15	195	3000	1000	1.5	150	0	0							0	
14:31:00	49	0.1	252	100	10	0	0	0	0							0	
14:33:00	40	0.2	347	3000	100	10	175	16	steaks							1	
14:35:00	74	0.27	508	3000	1000	3.5	200	0	0							1	
14:37:13	40	0.22	654	3000	1000	15	200	0	0							1	End run 4
14:38:19	54	0.19	863	3000	1000	0	0	0	0							0	Start run 5 3100ft
14:40:00	97	0.13	879	3000	1000	9	100	0	0							1	
14:42:00	59	0.1	903	10	0	0	0	0	0							0	
14:44:45	33	0.15	1093	3000	1000	11	100	25	streaks								FFSSP seconds timer stopped strobing
																	stopped block transfers still increasing

CLOUD PHYSICS LOG Flight B 259

Date: 19/01/07	Operator: JT	DRS Time: +0	AU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 3 of 3

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
14:48:00			1330														Block transfers responding to in cloud and out of cloud yet all other parameters frozen!
													128C	In bay T			Race to the skies to drop sonde
14:55:50	FFSSP		1361														D+5v = 9.3, A+5v=7.3, A-5v=-2.2
14:58:00																	FFSSP off
15:02:40																	FFSSP on B888
15:05:26	10	0.09	0	0	0	0	0	0	0							0	P8 55000ft
15:06:16	15	0.09	0	2	0	0	0	0	0							0	5000ft
15:07:10	194	0.36	19	3000	1000	417	150	166	200							1	Fl44
15:08:05	22	0.15	30	1000	300	447	800	6366	800							1	Fl36 cusp of the bottom of cloud
15:10:55	9	0.11	76	10	0	0	0	0	0							0	FL30
15:11:47	18	0.09	76	10	0	0	0	0	0							0	P end FL20
15:12:34	11	0.1	76	10	0	0	0	0	0							0	P9 up start FL20
15:14:04	22	0.28	92	3000	1000	834	175	83	200							1	FL38 cloud start
15:15:09	12	0.8	101	0	0	0	0	0	0	0						1	FL51cloud end
																	P9 end
15:16:30	46	0.31	113	3000	1000	138	175	0	0	0						1	P10 start cloud start at FL49
15:17:57	2.9	0.16	132	0	0	0	0	0	0	0						0	End cloud FL37
15:21:24	2.2	0.09	134	0	0	0	0	0	0	0							I-rupt FL30
							Cloud!										Fl28
																	FL26 P10 end
15:22:38	150	0.33	167	3000	1000	149	175	125	streaks							1	Start run 6 2600ft
15:24:00	348	0.26	247	3000	1000	22	150	16	Noise??							1	
15:26:00	42	0.33	402	3000	1000	50	275	208	Streaks							1	
15:28:00	15	0.24	512	3000	1000	0	0	0	0	0						0	
15:30:00	13	0.08	581	0	0	0	0	0	0	0						0	
15:32:59	145	0.16	696	3000	1000	10	200	0	0	0						1	End of run 1
15:33:11	3	0.12	696	0	0	0	0	0	0	0						0	Start P11 FL26
15:33:48	122	0.24	696			68	175									1	FL18 FFSSP frozen again blocks not increasing
																	Seconds not counting temps and volts appear ok turned off at 15:37:00
																	FFSSP restarted 15:40:00 B777

FAAM Dropsonde Flight Log

Flight No.	B259	Date	19/01/07
Page No.	1 of 1	Operator	SWH

GMT	**Sonde No.**	**Event**	**Comments**
		e.g. launch, splashdown	*e.g. wind data? PTH data? Lat/Long* *NB strings of dropsonde data contain:* *time, pressure hPa, T deg C, RH %, wind direction deg, wind speed m/s, longitude, latitude, height m*
145650	1	Launch	505.50 -16.20 95.91 248.40 37.60 -15.80 -5.900695 50.458631 5679.01 0
150359	1	Splashdown	1015.96 12.02 95.32 224.52 15.93 -11.18 -5.748612 50.496434 90.31 8

Flight: B259

KEY

- Not Fitted
- Fitted, Not Operated
- Duff Data
- Minor Problems
- OK

Thermometers
- Cabin Temperature:
- Heimann:
- Deiced Temp:
- Non-deiced Temp:

Hygrometers
- FWVS:
- General Eastern:
- Johnson Williams:
- Nevzorov:
- Total Water Probe:

Cameras
- Downward Facing:
- Forward Facing:
- Rearward Facing:
- Upward Facing:

Navigation + Aircraft
- Cruciform GPS:
- GIN Applanix:
- INU Honeywell:
- Radar Altimeter:
- RVSM IAS:
- RVSM Static Pressure:
- XR5 GPS:

Misc Core
- AMTG:
- AVAPS:
- Cabin Pressure:
- Fax machine:
- Printer:
- S9 Static Pressure:
- Satcom C:
- Satcom H:
- Turbulence Check Press:
- Turbulence Diff Press:
- Weather Radar:

DLUs:
- DLU AERACK:
- DLU BBR Lower:
- DLU BBR Upper:
- DLU Core Chem:
- DLU Core Consoles:
- DLU Port Aft:
- DLU Port Fwd:
- DLU Stbd Fwd:

Radiometers
Lower:
- BBR (clear) Lower:
- BBR (IR) Lower:
- BBR (red) Lower:

Upper:
- BBR (clear) Upper:
- BBR (IR) Upper:
- BBR (red) Upper:

- ARIES:
- DEIMOS:
- IR Camera:
- JNO2 Lower:
- JNO2 Upper:
- JO1D Lower:
- JO1D Upper:
- MARSS:
- SHIMS Lower:
- SHIMS Upper:
- SWS:
- TAFTS:

Cloud Probes
- 2DC:
- 2DP:
- FFSSP:
- PCASP:
- ADA:
- CCN:
- CDP:
- CIP 100:
- CIP 25:
- CPI:
- CVI:
- SID1:
- SID2:

Aerosol
- CPC 3025A:
- Filters 47mm:
- Filters 90mm:
- Neph - Dry:
- Neph - Wet:
- PSAP:
- AMS:
- CPC 3010A:
- INC:
- VACC:

Chemistry
- CO Aerolaser 5002:
- NOx TE42C:
- Ozone TE49C:
- Ozone TE49:
- SO2 TE43C:
- TDLAS (NIR) CH4:
- TDLAS (NIR) CO2:
- FAGE:
- Formaldehyde:
- NOxy:
- ORAC:
- PAN:
- PERCA:
- Peroxide:
- PTRMS:
- TDLAS (1C):
- WAS Bags:
- WAS Bottles:

Misc Non-Core
- CASI/ATM:
- LIDAR:
- LTI:
- SAW Hygrometer:

Report Created 05/02/2007 11:34:54

Last Updated: 19/01/2007 17:53:36

Faults / Incidents Log

Flight No. B259
Date: 19th January 2007

Instruments

1. Cruciform GPS – u/s

Aircraft

Satcom H Calls

Pre-Flighter's Log

Date: 19/01/67 Flight No: B259 Pre-Flighter: SWH

Item	√ or x	Location	Action	Comments
1	✓	Hangar	Collect Dustbin, put on a/c	
		Aircraft Cabin		
2	X	Core Chemistry	Gases x 3 ON	CO removed.
3	✓	Cabin	All Racks Checked	
4	✓	Fwd CorCon	All reqd CBs made	
5	✓	Aft CorCon	CBs made, PCs ON	
6	✓	HORACE	Optical Disk loaded	
7	✓	HORACE	Recording data	
8	✓	HORACE	DLU Status Checked	
9	✓	HORACE	HORACE Status Checked	
10	✓	Satcom H	Power LED ON	
11	✓	Nevzorov	Checked and OFF	
12	✓	GPS	Checked	
13	✓	INU	Align	
14	✓	Cameras Pictures	Checked x 4 OK	
15	✓	Core Chemistry	Instruments Checked OK	
16	X	Core Chemistry	CO Flows Checked OK	CO not Fitted
17	X	FWVS	Set up	NOT FITTED
18	✓	Video x 2	Records okay, Rewind	
19	✓	Delced Rosemount	Heater Checked / Set	
20	✓	Heimann	Calibration Checked	
21	X	TWC	ON & Checked	NOT FITTED
22	✓	GE	Balance checked	
23	✓	INU	Navigate then back to Align	
24	✓	Hubs x 4	Checked ON	
25	✓	Fwd Console	Miss. Sci Laptop CB made	& CB on Port Fwd SSP
26	✓	CNC	Butanol filled	
27	X	CGPS	Set up	NOT working/US
28	✓	Miss. Sci Laptop	Checked Onboard	

External Checks overleaf →

Pre-Flighter's Log

Item	√ or x	Location	Action	Comments
		External		
29	✓	Turb Probe	Clean if reqd, Photo taken	
30	✓	JW	Cleaned & Checked	
31	✓	DI Rosemount	Cleaned & Checked	
32	✓	NDI Rosemount	Cleaned & Checked	
33	✓	Nevzorov	Cleaned/windings checked	
34	✓	GE	Cleaned & Checked	
35	✓	Lower BBRs	Domes cleaned/checked	
36	✓	Camera Windows	Cleaned	
37	✓	Heimann	Lens checked OK	
38	X	TWC Cover	Fitted if required	TWC NOT FITTED
39	✓	All other covers	Removed	
40	✓	Dustbin	Returned to hangar	JC
41	✓	Tools	Check ALL in Toolkit	JC
42	✓	Tools	Avalon informed	JC
		Avalon Checks		Signed
43	✓	Upper BBRs Checked & Cleaned		
44	✓	ICEX applied		
45	✓	Traps empty (weekly only)		

MISSING LOG SHEETS:

The following log sheets are not available for flight B259:

Log	Reason
Cloud Physics Processing	Awaiting processing completion
TAFTS	No log is ever taken for TAFTS

Document control

Revision	Date	Author	Comments
r0	8 Mar 2007	Doug Anderson	Initial version missing the above noted logs
r1			
r2			

VIDEO RECORDINGS:

3 x Forward Facing Cameras
3 x Up/Downward Facing Cameras

Digital8 video recordings from this flight reside with :

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